

### **Notes from Ms. Erica Williams May 29, 2015 presentation on “Tectonics in Canada”**

- Oldest rock in Canada: 4.03 billion years in North West Territories, Acasta Gneiss
- Youngest rock in Canada: 310+ years, in Skeena region, Tseax Lava, BC
- Oldest Structural unit in Canada: Canadian Shield, 1 billion years old
- Youngest Structural unit in Canada: Southern part of Vancouver Island, 42 million years old
- Canadian Rockies structurally different than American Rockies (below Glacier National park)
- Oldest rocks in BC: 2 billion years, Monashees
- Terrains = fancy name for a structural unit
- Previous supercontinent, before Pangea: “Rodinia”
- Laurentia has been stable for a long time. Part of Rodinia, then Pangea, then North America
- Appellation Mountains formed when NA collided with Africa
- Iceland only about 6 million years old
- Many terrains collided on the coast pushing up the Rockies with folds and faults
- In about 20 million years, Juan de Fuca plate will disappear, be completely subducted away
- Riverside Secondary hung off of the cement pillars so won’t collapse in earthquake (whereas Charles Best and Port Moody built on old garbage dumps, not stable)
- Only really started to understand that the plates are moving in the 1970s, before that buildings and bridges weren’t built to withstand a major earthquake
- Houses on top of Mary Hill Bypass built on glacial till, will slide off into Fraser River in earthquake
- Density of: Crust 2.7, Core 13 (quartz is about 2.7)
- Slab pull in conjunction with convection cells causes plate motion – but really we don’t know, density increases with depth so slab won’t be pulled down (not different enough in density with material down there) and hot magma won’t rise since too dense compared to magma closer to the top of the asthenosphere.
- Watch Video clip - earth 600 million years in less than 2 minutes:  
<https://www.youtube.com/watch?v=cQVoSyVu9rk>

### **Questions (to be handed in):**

1. How do pillow lavas form? How do they get attached to Vancouver Island? –
2. Why are the Rockies so folded/faulted/distorted? –
3. Why is coastal BC earthquake country? –
4. Why does western NA have volcanoes? –
5. Why is there a 1000km trench from south east BC through to the Yukon? –